## **Pedestrian Safety**

Initiative Meeting #4 January 30, 2009



## **CountyStat Principles**

- Require Data Driven Performance
- Promote Strategic Governance
- Increase Government Transparency
- Foster a Culture of Accountability





## **Agenda**

- Introductions
- Follow-up items from October 21, 2008 meeting
- High Incidence Areas Update
- Pedestrian Safety Strategy
- Wrap-up





## Follow-up Items from October 21, 2008

 Examine collisions involving senior citizens and identify strategies for targeting this population.

Complete

- Patterns and factors: turning vehicles, many not in right of way, driver awareness
- Will perform road safety audit on Rockville Pike north of Montrose
- Follow up with the time it takes to get pedestrian collision data into the traffic database.

Complete

- RMS currently scheduled to go live in March
- Until then, MCPD Records is soliciting volunteer/intern support to help with entry and with cleaning up errors
- Police data being downloaded quarterly to DOT
- Report on how the Safe Routes to School program will prioritize schools moving forward.

Complete

Schools reprioritized to reflect pedestrian collisions





## **Update on Pedestrian Collisions**

- After holding steady for several years, pedestrian collisions have increased 15% during the first nine months of 2008.
  - Verified analysis and data query terms
  - Increase is not a data error
- Use spatial analysis of collision data to help answer.

	2004	2005	2006	2007	2008
January	21	36	31	32	47
February	30	28	28	33	30
March	36	37	28	34	37
April	32	26	25	35	34
May	39	27	36	34	51
June	33	41	33	29	26
July	33	24	29	20	41
August	24	28	37	26	32
September	31	39	39	38	28
Jan to Sept Total	279	286	286	281	326
October	46	48	42	37	
November	52	48	49	60	
December	43	52	52	34	





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### Safe Routes to Schools Prioritization Revised

### ENGINEERING: Reprioritize by including pedestrian collisions

- Weighted scores with high pedestrian collisions
- Factored into engineering evaluation for overall score
- List reprioritized using crash data
- County-funded Safe Routes to Schools (SRTS) will reflect reprioritization
- Grant funded/approved SRTS construction sites set previously
- Future SRTS grant applications will reflect reprioritization

### EDUCATION: Increase at schools with high ped collisions

- SRTS Coordinator working with 109 Elementary Schools and 31 Middle Schools
- SRTS Coordinator placing highest priority on schools with ped collisions within 1/4 mile

### ENFORCEMENT: Increase at schools with high ped collisions

 SRTS Coordinator will request enforcement actions at schools with ped collisions where deemed needed





## **Safe Routes to School Priority Schools - Original**

	School	Number of Crashes
1	Flower Valley ES	0
2	Stone Mill ES *	1
3	Newport Mill MS	0
4	Earle B. Woods MS **	2
5	Kingsview MS *	1
6	Oakland Terrace ES	0
7	Rock Creek Forest ES	1
8	Bells Mill ES	3
9	Lucy V Barnsley ES	0
10	Woodlin ES **	1
11	Georgian Forest ES *	0
12	Jackson Road ES **	5

	School	Number of Crashes
13	South Lake ES	6
14	Belmont ES	0
15	E. Brooke Lee MS	0
16	Bradley Hills ES	1
17	John Poole MS	0
18	Rosa Parks MS *	0
19	Walter Johnson HS	3
20	Weller Road ES	2
21	Argyle MS **	8
22	Stonegate ES	0
23	Thurgood Marshall ES *	0
24	Westbrook ES **	0





## **Safe Routes to School Priority Schools - Revised**

	School	Number of Crashes
1	New Hampshire Estates ES	37
2	Bethesda ES	33
3	Gaithersburg ES	12
4	Argyle MS**	8
5	White Oak MS	8
6	Olney ES*	6
7	South Lake ES	6
8	Oak View ES	6
တ	Rolling Terrace ES	6
10	Jackson Road ES**	5
11	Harmony Hill ES	5
12	Eastern MS	5

	School	Number of Crashes
13	A. Mario Loiederman MS	5
14	Stedwick ES	5
15	Rock Creek Forest ES	4
16	Glen Haven ES	4
17	Greencastle ES	4
18	Rosemont ES	4
19	Bells Mill ES	3
20	Montgomery Village MS	3
21	Neelsville MS	3
22	Ronald A. McNair ES	3
23	Montgomery Knolls ES	3
24	Forest Knolls ES	3

**CountyStat** 

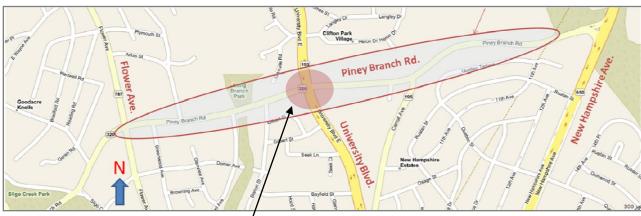
Education: 11 schools previously designated in grant + schools identified as having ped collisions within 1/4 mile of school



Meeting #4

## **High Incidence Areas**

 First high incidence area: Piney Branch Road from Flower Avenue to the Prince Georges County/Montgomery County line



- Number of collisions
  - Intersection of Piney Branch Road and University Boulevard has the highest concentration of collisions
  - Total collisions in the High Incidence Area

2004	2005	2006	2007	2008*	Total
14	10	10	10	6	50



\* 2008 data includes collisions from January through September only Map reproduced from "Piney Branch Road (MD320) Pedestrian Road Safety Audit"

## **Piney Branch HIA: Timeline of Activities**

Activity	Timeline	Partners	Status
Pedestrian Road Safety Audit  -Assembled Team  -Public Input  -Conducted Audit  -Prepared Report	-September 2008 -October 16, 2008 -PRSA October 21-22, 2008 -December 2008	DHCA MCPD MD State Highway Adm. WMATA Long Branch residents PRSA consultant	Complete
Pedestrian Safety Survey  - Bilingual survey development  - Survey administration  - Analysis of results	-October 2008 - February 2009 -Survey administration Jan-Feb 2009	DHCA Regional Service Center CountyStat CASA	In progress
Implementation  -Coordinate responsibilities  -Implement Quick Fixes  -Planning and engineering  -Construction	-February 2009 -Spring 2009 -Spring-Summer 2009 -Fall 2009	MCDOT MSHA WMATA PEPCO Consultants Contractors	Beginning



1/30/2009

## **Piney Branch HIA: Summary of Audit Findings**

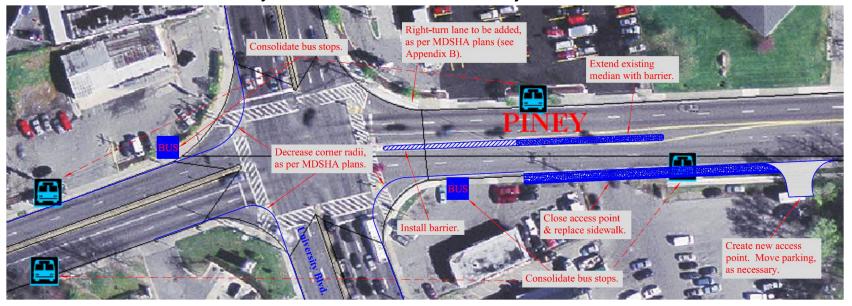
- Multiple conflicts between vehicles and pedestrians
  - Vehicle-to-vehicle conflicts
  - Pedestrian-to-vehicle conflicts
- High number of mid-block pedestrian crossings
  - Long distances between pedestrian crossings
  - Bus stop locations encourage mid-block crossings –East Piney Branch
- Issues with existing pedestrian accommodations
  - Improperly located and inoperable pedestrian push buttons
  - Pedestrian accommodations obscured by vegetation
  - Narrow sidewalk width
- Poor nighttime visibility
- Poor sight distances for vehicles
- Vehicles not stopping for school buses





## **Piney Branch HIA: Recommended Improvements**

#### Piney Branch Road at University Boulevard







# Piney Branch HIA: Audit Findings Piney Branch Road and University Boulevard

#### Multiple conflicts at driveways

- Access points to Panam Latino
   Market and LA Market act like an intersection with no traffic control.
- Left turning traffic from all directions is heavy.
- Access points interfere with sidewalks and the high number of pedestrians that use them.
- Driver's attention focused on finding gaps in traffic - less attention to pedestrians.

### Suggestions

 Relocating the access point from the Panam Latino Market further north (across from the church driveway) to reduce conflicts at this location.



Multiple conflicts: Parent crossing with his children while cars are turning left in/out of driveways.



# Piney Branch HIA: Audit Findings Piney Branch Road and University Boulevard

#### Mid-block pedestrian crossings

- Pedestrians often trace the shortest or most convenient paths.
- High numbers of pedestrians were observed to cross midblock at this location primarily to access the bus stops and also to the stores located on either side of Piney Branch Road.

- Extend the raised median north of University Blvd.
- Install a pedestrian barrier along the entire section of the raised median.
- Relocate the northbound bus stop closer to University Blvd. to encourage crossing at the intersection.
- Consolidate the southbound bus stop with the bus stop on the far side of the intersection to encourage crossing at the intersection.



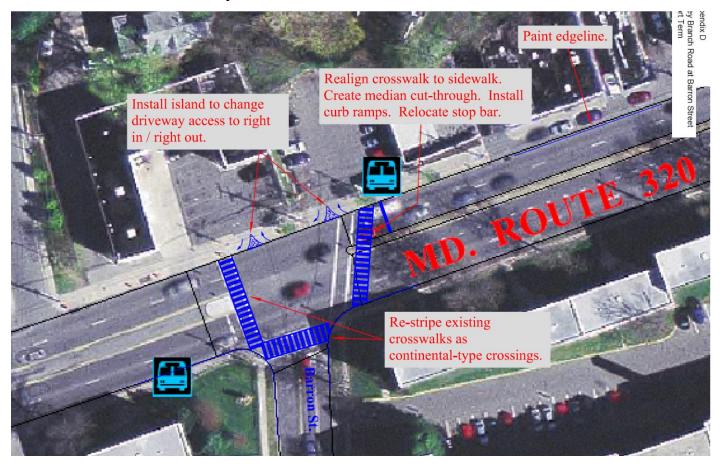
Pedestrian crossing midblock after disembarking a bus between Piney Branch Road and Seek Lane on University Boulevard





## **Piney Branch HIA: Recommended Improvements**

#### Piney Branch Road at Barron Street





#### Conflicts caused by multiple access points

- There are three driveways on the west side of the intersection that allow vehicles to enter/exit road.
- There is no traffic control for driveways.
- Vehicles exiting the driveways conflict with each other and with pedestrians.

#### Suggestions

- Short term: Consider making the driveways right-in and right-out and relocating the crosswalk on the north side.
  - Pro: Left turn conflicts from driveways are eliminated
  - Con: Channels reduce effective sidewalk width which may cause pedestrians to walk through parking areas.
- Long term: Consider consolidating the three access points into one driveway and provide traffic signal control. Relocate crosswalk.
  - Pro: Multiple conflicts from driveways are eliminated
  - Con: Extensive coordination with business owners, loss of some parking.



Vehicles turning left and right from the Sterling Dentistry driveway and left from the Miles Glass Co. driveway on the west side of Piney Branch Road.

1/30/2009





## Improper location of pedestrian push button

- Pedestrian push button for the crosswalk on the north side of this intersection is hidden behind the traffic controller box.
- This push button is not accessible and may reduce the compliance of pedestrians using the push button to activate the pedestrian signal at this location.

### **Suggestions**

 Consider installing a postmounted accessible pedestrian push button.



Photo of pedestrian push button in the northeast corner of Barron Street and Piney Branch Road hidden behind the traffic controller box



#### Traffic signals hidden by trees

- Traffic signal heads for westbound Barron Street were blocked by trees.
- Vehicles yielding to pedestrians while making a left turn from Barron Street to go southbound on Piney Branch Road are not able to see the signal head.

- Short term: Consider trimming the tree to improve the visibility of the traffic signal heads.
- Long term: As part of consolidating the driveways on the west side of the intersection, install the signal heads at appropriate location.



Photo showing the tree blocking the traffic signal heads for Barron Street at Piney Branch Road.





#### Poor nighttime visibility

- The section between Barron Street and University Boulevard was observed to have poor night time visibility.
- Pedestrians crossing the street, especially midblock after disembarking buses were not seen by drivers until they were very close, causing the drivers to react on a very short notice.
- A resident noted this problem to the Road Safety Audit team during the field visits.

- Ensure consistent level lighting between Barron Street and University Boulevard.
- Repair or replace the street lights between Barron Street and University Boulevard.
- Ensure that the bus shelters near Barron Street are lit.



Night time photo showing transit riders waiting at the bus stop between Barron Street & University Boulevard in the southbound direction





#### Sidewalk width

- Sidewalk on the eastside of Piney Branch Road between Garland Avenue and Barron Street is only 4' wide.
- Overgrown vegetation and foliage along side of the sidewalk appears to reduce the effective width of the sidewalk as does the lack of a buffer from travel lanes.

- Consider widening the sidewalk to 5 feet minimum to meet the ADA requirements. If possible, widen sidewalks to a minimum of 6 feet throughout the corridor.
- Trim vegetation to improve the effective sidewalk width.



Narrow sidewalk on the east side of Piney Branch Road between Garland Avenue and Barron Street





## Lack of direct connection to the Long Branch bike trail

 Piney Branch Road intersects the northern portion of Long Branch bike trail near the Long Branch Community Center.

### **Suggestions**

- A direct connection for trail users is not provided; the nearest crossing is at Barron Street.
- Consider installing wayfinding signs to direct trail users to cross at Barron Street once enhancements are made to the intersection.



Photo showing the section of Piney Branch Road at the Long Branch bike trail near Long Branch Community Center

1/30/2009





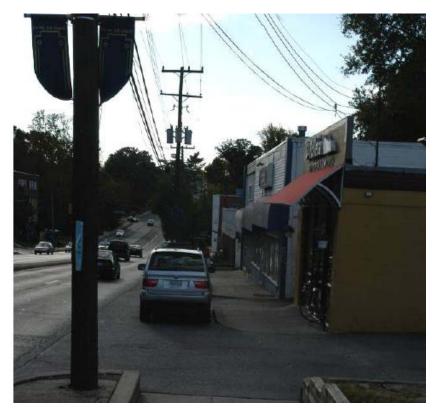
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## Lack of delineation between travel lanes and parking lane

- Pocket parking is provided along the southbound lanes of Piney Branch Road between University Boulevard and Barron Street.
- There is no delineation between the travel lanes and the parking lane.

### Suggestions

 Provide white edge line markings to delineate the travel lane and the parking lane.



Parking in front of the Pupuseria Restaurant between University Boulevard and Barron Street not delineated from the southbound travel lanes





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## **Piney Branch HIA: Recommended Improvements**

Piney Branch Road between Nob Hill Apartments and Forest Park Apartments





# Piney Branch HIA: Audit Findings Piney Branch Road Between Nob Hill and Forest Park Apts.

#### Long distances between crossings

- The closest marked crosswalk for Nob Hill Apartments is approximately 900 ft away at Carroll Avenue
- For the Forest Park Apartments, the closest is approximately 1200 ft away at New Hampshire Avenue.

### Poor sight distances

 Sight distances for vehicles existing Nob Hills Apartments and Forest Park Apartments are limited by horizontal and vertical curves.

- (short-term) A raised median refuge area at the two apartment access points north of Carroll Ave.
- (long-term) Consolidate bus stops
- (long-term) Two-stage signalized crossing
- Relocate the advance warning signs farther upstream.



Pedestrians crossing towards Nob Hill Apartments after disembarking a bus





# Piney Branch HIA: Audit Findings Piney Branch Road Between Nob Hill and Forest Park Apts.

#### Poor nighttime visibility

- Nighttime visibility on Piney Branch Road to the north of Carroll Avenue is poor.
- Street lights especially near the bus shelters are spaced too far apart.
- Pedestrians crossing the street at these locations after dark are not visible to the drivers and are at higher risk for a collision.

- Consider installing additional street lights to decrease spacing.
- Repair/replace the street lights that are not working.
- Ensure that the bus shelters are lit.
- Consider installing raised pavement markers to provide positive guidance for drivers.



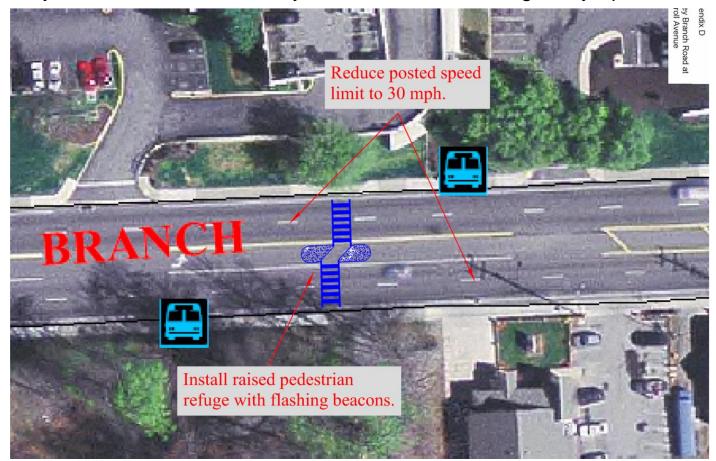


Day and night photos of same location near Forest Park Apartments



## **Piney Branch HIA: Recommended Improvements**

Piney Branch Road at Pine Way Towers and Park Montgomery Apartments





# Piney Branch HIA: Audit Findings Piney Branch Road at Pine Way Towers and Park Mont. Apt.

#### Mid-block pedestrian crossings

- Pine Way Towers and Park Montgomery Apartments are high rise apartments with residents that depend on transit.
- The distance between the two closest crossings, at University Boulevard and Carroll Avenue, is approximately 1300 feet.
- Entrance to the New Hampshire Estates park is located between Pine Way Towers and Park Montgomery Apartments along the east side of Piney Branch Road.

- Consider installing a midblock crosswalk with a median refuge and flashing beacons between Pine Way Towers and Park Montgomery Apartments.
- Consider reducing posted speeds in conjunction with the midblock crosswalk between Pine Way Towers and Park Montgomery Apartments to reflect the commercial, high-pedestrian use nature of the roadway (reduce posted speed from University Boulevard to Carroll Avenue).



Pedestrians crossing midblock from New Hampshire Estates park to Park Montgomery Apartments





# Piney Branch HIA: Audit Findings Piney Branch Road at Pine Way Towers and Park Mont. Apt.

#### Vehicles not stopping for school buses

The Road Safety Audit team noticed that vehicles were not stopping for a stopped school bus with flashers.

- Relocate the existing "STOP FOR SCHOOL BUS WHEN RED LIGHTS FLASH" sign in the northbound direction closer to the roadway and install a same sign for the southbound direction.
- Implement driver education programs through various community based programs and centers such as CASA.
- Increase enforcement along this section of roadway during school pick-up and drop-off periods.



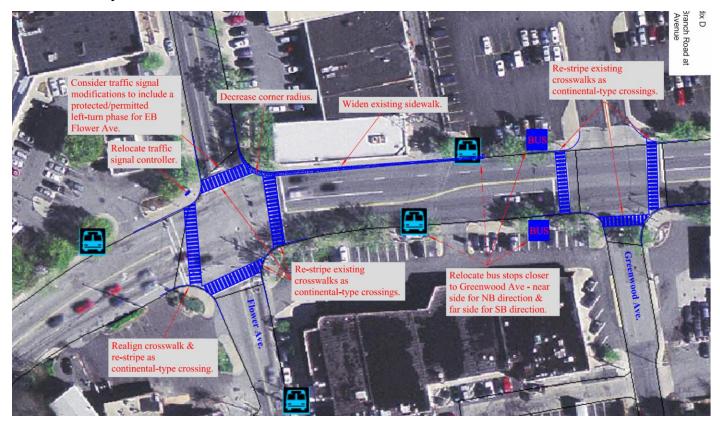
Photo showing vehicles not stopping for a school bus in the same direction with flashers on





## **Piney Branch HIA: Recommended Improvements**

Piney Branch Road at Flower Avenue and Greenwood Avenue







#### Sidewalk width

- Sidewalks along the western side of Piney Branch Road are narrow for the amount of pedestrian activity.
- The effective width of the sidewalk is reduced by two factors:
  - 1. The proximity to the building.
  - 2. The lack of a buffer between the sidewalk and travel lanes.

### Suggestions

 Consider creating a wider sidewalk possibly with a buffer on the west side by narrowing the wide southbound outside lane.



Narrow sidewalk adjacent to the wide southbound travel lane.





## Right turning vehicles not yielding to pedestrians in crosswalk

- Southbound right turns from Piney Branch Road onto Flower Avenue are observed to not yield to pedestrians in the crosswalk or beginning to cross.
- A combination of vehicles traveling at high speeds and limited visibility at the corner may be contributing factors.

- Consider widening sidewalk.
- Consider reducing corner radius slightly on the northwest corner of the intersection to reduce vehicle speeds and create greater sight distance between pedestrians waiting to cross and turning vehicles.



Photo of a driver failing to yield to pedestrian beginning to cross the street in the crosswalk



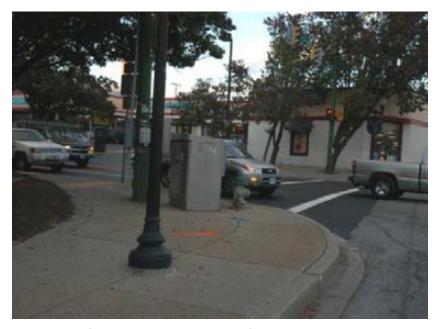


## Obstructed view of pedestrians in the sidewalks

- Sight obstructions (i.e. traffic control box) block the view of the pedestrians in the crosswalk.
- The crosswalk on the south leg is located far away from the intersection where motorists may not be focused on pedestrians.

### Suggestions

- Consider relocating the traffic controller box off of the sidewalk.
- Consider moving the crosswalk closer to the intersection.



View of sight obstructions from the crosswalk on the south leg

1/30/2009



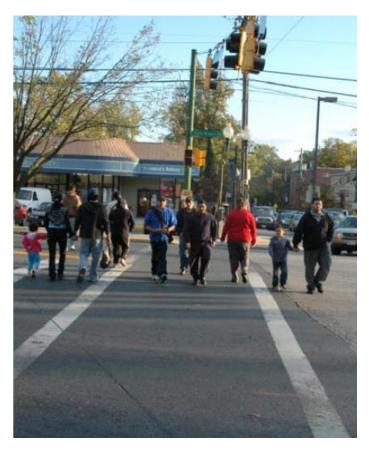


## Conflicting left turning traffic with pedestrians

- Eastbound left turn phase is a permissive left turn phase and there are a high number of pedestrians using the north side crosswalk which may result in a pedestrian vehicular conflict.
- Pedestrians must walk outside of the crosswalk due to the large volume of pedestrians crossing further exposing them to vehicle conflicts.

### Suggestions

- Consider installing a protective/ permissive left turn phase for eastbound Flower Avenue.
- Consider using wayfinding techniques to northbound Piney Branch Road from eastbound Flower Avenue at Arliss Street to reduce left turning traffic at this intersection.
- Consider widening and installing high visibility crosswalk.



Pedestrians crossing the crosswalk on the north leg conflict with right and left turning traffic

1/30/2009





### Mid-block pedestrian crossings

 High number of pedestrians were observed crossing midblock at the location of bus stops between Flower Avenue and Greenwood Avenue.

- Consider relocating the bus stop for the northbound direction to the far side of the intersection of Greenwood Avenue and Piney Branch Road.
- Consider relocation the bus stop for the southbound direction to the far side of the intersection of Greenwood Avenue and Piney Branch Road.



Pedestrian crossing midblock after disembarking a bus between Flower Avenue and Greenwood Avenue.



## Lack of pedestrian signals parallel to Piney Branch Road

 Pedestrian signal heads are missing for approaches parallel to Piney Branch Road. This may result in pedestrians crossing with conflicting traffic.

### **Suggestions**

 Consider installing countdown pedestrian signal heads parallel to Piney Branch Road.



Photo showing lack of pedestrian signals crossing Greenwood Avenue and also curb ramps that have excessive slope at the northeast corner of the intersection





### Inactive pedestrian push buttons

 Pedestrian push buttons at this intersection are inactive, which will discourage proper use of push button devices.

- Ensure the pedestrian push buttons are in working condition at all four corners.
- Consider upgrading push buttons to the type that confirms the press.



Inactive pedestrian push buttons at the southeast corner of Greenwood Avenue and Piney Branch Road





#### Traffic signals blocked by trees

Traffic signal heads for northbound Piney Branch Road are blocked by overhanging tree branches. This may result in unintended consequences for drivers in the northbound direction.

#### **Suggestions**

 Consider trimming the tree to improve the visibility of the traffic signal heads.

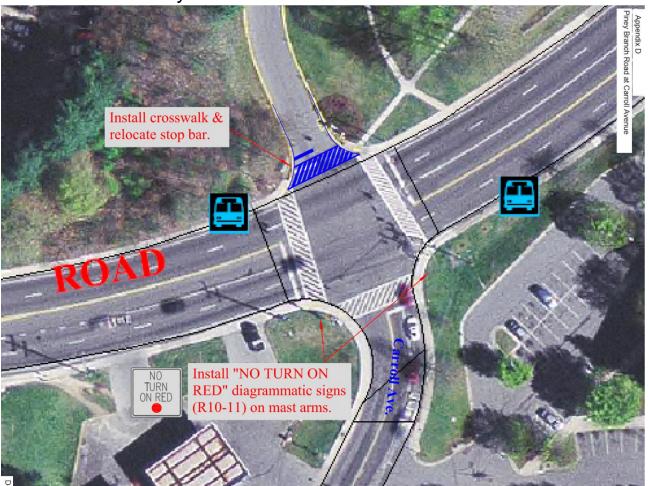


Traffic signal heads cannot be seen from the outside lane on Piney Branch Road



## **Piney Branch HIA: Recommended Improvements**

Piney Branch Road at Carroll Avenue







#### Conflicts at pedestrian crossings

- Vehicles were observed to not yield to pedestrians in the crosswalk.
- Vehicles in the westbound left turn lane seem to be blocking the view between the pedestrians and right turning vehicles potentially creating a major conflict between them.
- This is especially critical as many of the pedestrians in this area were children, who may not perceive this threat and who present a smaller profile to motorists.

#### **Suggestions**

- Consider reducing speeds south of Carroll Avenue in conjunction with the suggested midblock crosswalk between Pine Way Towers and Park Montgomery Apartments.
- Consider installing "No Right Turn on Red" on northbound and westbound approaches.



School bus in the westbound left turn lane on Carroll Avenue blocked the view between the pedestrian and the right turning vehicle





#### Inconspicuous pedestrian signals

 Pedestrian signal heads are faded and are not clearly visible, especially with the afternoon glare on the signal heads.

#### **Suggestions**

 Consider replacing the old pedestrian signal heads with LED countdown pedestrian signal heads.



Faded signal heads for the crosswalk on the eastside are difficult to read, especially with the sun glare on them





## Inaccessible pedestrian push button

- The pedestrian push button at the southeast corner of the intersection is blocked by overgrown vegetation and foliage.
- When accessible features are not available, people in wheel chairs, with strollers, or with mobility restrictions may find difficulties crossing the street.

### Suggestions

 Trim vegetation to improve accessibility to the push button.



Photo showing the overgrown vegetation at the southeast corner of Carroll Avenue and Piney Branch Road

1/30/2009



#### Missing crosswalk marking on west leg

- There is no marked crosswalk on the west leg of the intersection. Marked crosswalks alert motorists to the presence of pedestrians and help direct pedestrians to cross in the proper location.
- Lack of crosswalk markings could also pose difficulties to people with visual impairments walking along Piney Branch Road.

#### **Suggestions**

 Consider installing crosswalk marking on west leg of intersection.

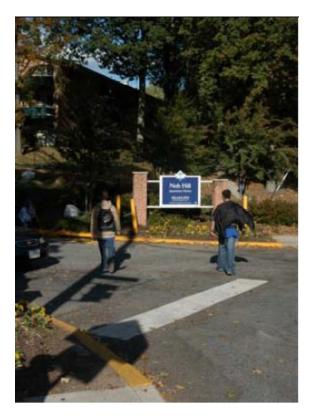


Photo showing pedestrians crossing intersection to Nob Hill Apartments



#### Sidewalk width

- Over grown vegetation and foliage along side of the sidewalk appears to be protruding into the sidewalk, reducing the effective width of the sidewalk.
- This condition can create accessibility issues for pedestrian with mobility restrictions and reduce the capacity of the sidewalk system.

#### **Suggestions**

Trim vegetation to improve the effective sidewalk width.



Vegetation at this location has encroached on the sidewalk, narrowing its effective width and making it more difficult to use for pedestrians with mobility restrictions and groups of pedestrians



## **Piney Branch HIA: Planned Improvements**

Improvement	MCDOT*	MSHA**
Short term improvements (0-6 months)		
–Fix pedestrian push buttons	X	
–Repair streetlights and bus shelter lights	X	
-Trim foliage	X	X
–Enhanced signing	X	Х
-Re-stripe / modify crosswalks	X	X
-Relocate bus stop	X	
–Enact turn restrictions		X
-Modify signal timing	X	
Mid term improvements (6-18 months)		
–Pedestrian refuge islands	X	Х
–Extending median	X	X
–Enhanced / additional lighting	X	
–Reconstruct / modify traffic signals	X	X
–Install pedestrian buffers – fences	X	Х
-Minor sidewalk enhancements	X	
Long term improvements (18+ months)		
Relocating / modifying business access points	X	Х
-Major sidewalk enhancements	X	X

<sup>•</sup>Montgomery County Department of Transportation (MCDOT) involvement needed

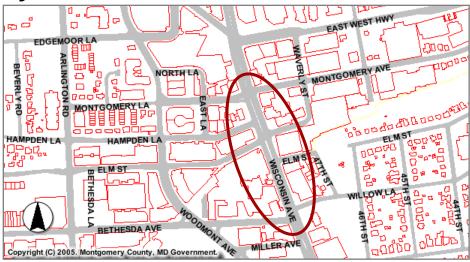
<sup>• \*\*</sup> Maryland State Highway Administration (MSHA) involvement needed





### **High Incidence Areas: Preview of Bethesda HIA**

 Second high incidence area: Wisconsin Avenue from Montgomery Avenue to Bethesda Avenue



- Pedestrian Road Safety Audit of Bethesda HIA:
  - Public Input December 11, 2008
  - PRSA December 16-18, 2008
  - Report in progress





## **High Incidence Areas: Preview of Bethesda HIA**

- Comparison of findings from Bethesda with those from Piney Branch
  - Piney Branch
    - Mid-block crossings
    - Infrastructure deficiencies
    - Pedestrian at fault
  - Bethesda
    - Turning vehicles
    - Most pedestrians use crosswalks
    - Drivers at fault





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### **Pedestrian Safety Strategy - Program Priorities**

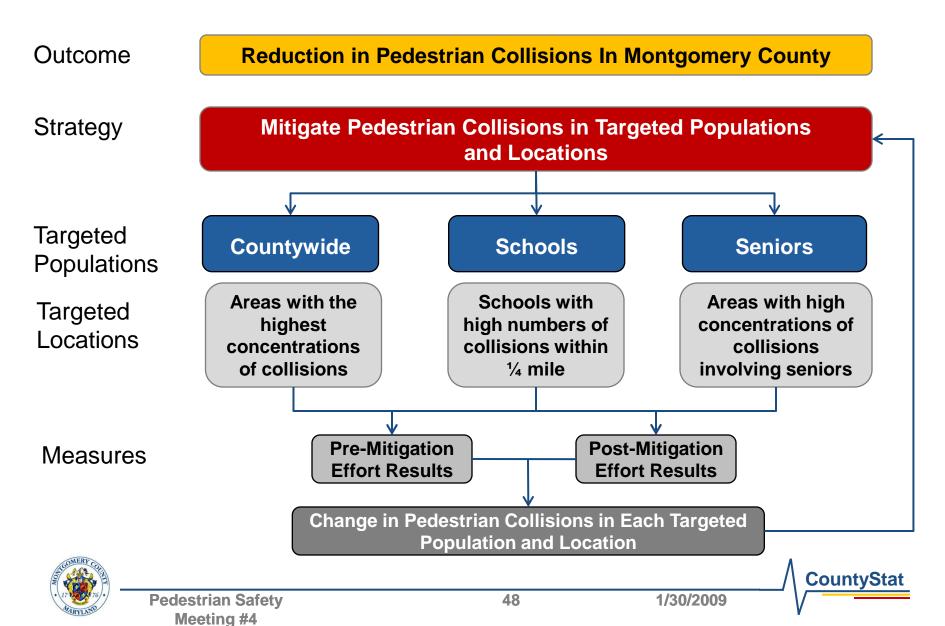
#### Process to Prioritizing Program

- "If the program is fully funded, what would we chose to do first rather than later?"
- Compile and distribute comprehensive list of all agencies' program elements eligible for "ped safety funding" (by 1/30/09)
- Hold Implementation Group Task Force meeting with Executive Branch members – reach consensus on program priorities (before 2/6/09)
- Review Task Force priorities with Steering Committee. Modify or endorse recommendations (by 2/18/09)
- Submit recommendations as part of budget process (by 2/20/09)





## **Pedestrian Safety Strategy**



### **Pedestrian Safety Strategy: Data Driven Performance**

- Bringing the CountyStat Function "In-house"
  - MCPD Discussion of Resource Needs:
    - Data Analyst Position
    - Program Analyst with GIS Applications





### **Pedestrian Safety Strategy: Monitoring Progress**

#### Progress Monitoring Report Developed

- Purpose: Track all ped safety activities that will contribute to lower number of collisions
- Organized by CE Initiative's strategies
- Tied to MCDOT's Action Plan
- Captures all data related to performance in one central location
- Continually updated
- Copies of current report available upon request





## Wrap-up

- Confirmation of follow-up items
- Time frame for next meeting

